

THE MIDWEST
ARCHITECTS NEWSPAPER
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SHIPPING CONTAINER DESIGN COMES TO MINNEAPOLIS NEIGHBORHOOD

New York-based LOT-EK has made a career of using the ubiquitous steel modules to create architecture, here in an office function.

LOT-EK

CAN DO

Minneapolis' North Loop neighborhood was once known for dusty warehouses, vacant lots and railroad tracks. Now it is a hub for nightlife, surrounded by new condos and anchored by Target Field—home to the

Minnesota Twins. In a fitting union of past and present, shipping container-loving architecture studio LOT-EK is making its Twin Cities debut in the former industrial neighborhood. The New York-based design team is working with local **continued on page 3**



COURTESY UNIVERSITY OF MINNESOTA

HGA TRANSFORMS THE UNIVERSITY OF MINNESOTA'S PERFORMANCE HALL

ENCORE

The sightlines were dismal for dance, the acoustics terrible for opera and orchestra. Chunks of plaster fell and the balcony swayed dangerously during rock concerts. In the 1990s, after playing their hit song "Love Shack," the B-52's warned the crowd to "dance in their heads."

By 2009, Northrop

The 1929 Beaux Arts landmark was turned into a multi-purpose campus facility.

Memorial Hall at the University of Minnesota—Clarence H. Johnston's 1929 Beaux Arts landmark for graduations, lectures, dance, and concerts, once known as the "Carnegie Hall of the Midwest"—was used only 51 times a year. The University had already replaced the roof and restored the brick-and-stone exterior of the iconic building, which anchors the north end of the Cass Gilbert-planned mall on the Minneapolis campus. Then, after years of studies and discussion, the University formulated a plan to transform Northrop into a multi-use facility for art, innovation, and academics.

The sumptuous new Northrop, completed by HGA Architects and Engineers, opened **continued on page 7**



Randolph Street tower shrinks parking podium.

COURTESY SMDP

RESIDENTIAL TOWER LOOKS TO A NEW WEST LOOP

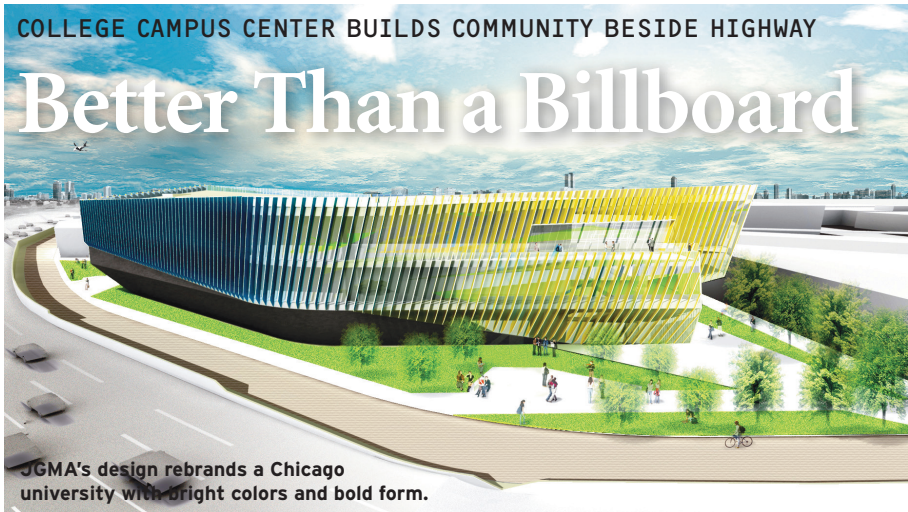
PARK LIFE

Chicago firm smdp has big plans for the West Loop. With developer Fifield Companies, it has plotted out a master plan that includes **continued on page 2**

SPECIAL SECTION: FACADES
AN SHOWCASES FIVE CASE STUDIES WHERE MATERIALS DEFINE THE DESIGN OF THE BUILDING ENVELOPE, PLUS THE LATEST IN GLAZING PRODUCTS, CLADDING SYSTEMS, AND MEDIA WALLS. SEE PAGES 14-31.

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COLLEGE CAMPUS CENTER BUILDS COMMUNITY BESIDE HIGHWAY

Better Than a Billboard

JGMA's design rebrands a Chicago university with bright colors and bold form.

COURTESY JGMA

Northeastern Illinois University (NEIU) has an identity problem. Often confused in conversation with Northwestern University in nearby Evanston, Illinois, or with Northeastern in Boston, the public university is spread across four Chicago-area campuses.

The school's Latino-focused northwest side location, El Centro, hopes to rebrand itself with a striking new building at 3390 North Avondale Avenue, about one mile east of El Centro's current campus.

Designed by **continued on page 5**



THE DELICATE ART OF LIGHTING MUSEUMS. SEE PAGE 10

COURTESY THOMAS PHIFER AND PARTNERS

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PLANNING CHICAGO’S NEAR WEST SIDE

It looks like Chicago’s near West Side watering holes could find themselves in the thick of the city’s latest historic district. Under a plan first made public on April 1, Randolph Street and Fulton Market would anchor a landmarked area beginning just west of the Kennedy Expressway and running until Ogden Avenue.

Modern land-use plans for the neighborhood go back at least 15 years, but it makes sense that the city is making a public push now—there might be no other area in the city whose identity has changed so rapidly. With Google moving into the Fulton Market Cold Storage warehouse, West Town’s cultural cachet may have fully fused with the pressure for commercial development cheered on by local tech sector boosters.

Like pretty much any landmark district proposal, this one needs to be carefully considered. Parts of the neighborhood certainly meet the criteria, and a real estate boomlet threatens to overshadow that fact if left to its own devices. But in a downtown neighborhood that has changed so much already, and which is now home to the city’s newest El station, some more density could be a good thing. It just has to be the right kind.

There is no doubt the neighborhood has character. Sepia-tone photos from the 1890s show a dusty Randolph Street packed with horse-drawn produce carts. In 1850, the city split Randolph at Des Plaines Street with the Market Hall building, which was demolished a few decades later. The widened street remained, however, housing an open-air farmers market. Most of the surviving historic buildings along that stretch are about 100 years old now. Randolph’s unique layout gives the strip a singular typology—raised sidewalks, two traffic medians, and sidewalk overhangs contribute as much to the sense of place as the brick industrial buildings.

Since about 2000, the district’s identity as a thriving marketplace and entertainment destination has been in resurgence, this time less as a place for processing food than for eating it. Randolph Street has quickly become the city’s premier dining strip, drawing on the area’s heritage as a hub for wholesale packaging and local farmers markets. Two rows of meat packing buildings still stand, including the handsome red-brick Fulton Street Wholesale Market Company facility—an 1887 headquarters for the nation’s “big three” packers. The 75 buildings up for landmark status under the proposal include popular restaurants like the Girl and the Goat, and the Publican.

The city likened the neighborhood’s prospects as an historic destination to Pike Place Market in Seattle and Cleveland’s Ohio City Market District. “There is a need for development to be more consistent with the area’s low density building scale, traditional loft district architectural character, and urban streetscape,” reads the city’s proposal, which is still awaiting public comment. That statement is somewhat charged, given the attractive real estate market nearby. Downtown high-rises peek over the expressway. Chicago’s hotel boom has followed the nightlife, though only one in the vicinity of Randolph Street is under construction now.

The first step is to draw up a new land-use plan. The City’s initial sketch does not stray too far from existing zoning, consolidating the northern swath of manufacturing-zoned land into the catch-all “innovative industries.” It maintains the predominantly commercial/business use of the bottom two-thirds of the proposed areas, but delineates two distinct historic districts: Randolph Row and Fulton Market. Bridging the two is an eight-block stretch of C2-5 and C3-3 zoning dubbed “stay and play”—surrounding the Morgan station, it would allow for development up to 15 stories. That is higher than Google’s 10-story brick warehouse, the tallest existing building in the West Town neighborhood.

It also forbids housing along Fulton Market. And, naturally, people are concerned about parking. The new CTA stop is a boon to the neighborhood. It makes the area more accessible without meddling in its naturally thriving scene. If there is one thing that will kill a historic district’s sense of place, it is parking podiums, surface lots, and hulking garages. Sure, it will need more parking, but it is past time to relax some of the city’s parking minimums on development, especially if the goal is to preserve character.

The plan is still a work in progress, with The Department of Planning and Development very much inviting feedback from the public. There is a May 21 public meeting on the draft plan, and we hope to hear more from area residents.

CHRIS BENTLEY



COURTESY SMDP

smdp’s design includes a continuous balcony with glass banisters, obscuring the boundary between apartment and skyline.

PARK LIFE continued from front page
10 million square feet of office space for a burgeoning tech sector over the next ten years, and a park that would cap the Kennedy Expressway—a Millennium Park for the West Loop, according to firm principal Scott Sarver.

The latest piece of that puzzle to fall into place is a 31-story office tower at 725 West Randolph Street. Located next to the expressway—what Sarver hopes will one day be park side real estate—the residential high-rise could serve as a gateway to the rapidly developing Fulton Market District.

It also features an automated parking system that would be the first of its kind in Chicago. “I think it’s going to be kind of revolutionary,” said Sarver of the parking system, which is unstaffed and relies on robotic pallets to store cars efficiently. A driver would pull onto a 20-square-foot turntable, leave their vehicle, and call it back using a cell phone when ready to leave. The system also makes parking more cost-effective from an architectural standpoint.

“The thing about parking usually is it never pays for itself,” said Sarver. Since cars can be stacked and stashed away in levels with smaller floor-to-ceiling heights than code would require for occupied floors, the system eliminates the need for a bulky podium. “It makes smaller sites a lot more palatable,” said Sarver, referring to a slew of small sites in River North and other Chicago neighborhoods where development pressure is high but square footage often is not.

On top of seven or eight stories containing 260 cars, 220 residential units enjoy views of downtown and the West Loop with ample outdoor space. The typical unit is between 500 and 600 square feet, including a courtyard that lets light and air into a bedroom and living space that features floor-to-ceiling glass. As the building rises, its floorplate twists six inches with each level, lending the form a subtle sense of movement.

A continuous balcony wraps around the building, with glass separators between units and a fritted glass banister. The balconies provide shading that helps shield the living areas from unwanted views of the highway. “It was sort of an idea about living in the city,” said Sarver. “You’re kind of seamless inside to outside. There’s an ownership of the skyline.”

The project is still lining up financing, but Sarver said the team expects to break ground this year. **CB**

LETTERS



GLUCKMAN MAYNER

LET THERE BE LIGHT
The following comments were left on archpaper.com in response to the article “Born Again” (ANMW02_02.19.2014).

This reminds me quite a bit of the never-built proposal, “Bombed Churches as War Memorials,” published in London after WWII, which presented various designs for bombed-out churches to be preserved in ruined form with the addition of garden plantings and a few amenities. In the event, there were a few bombed churches that were preserved, but not many, and the sites were not developed as visitor spaces. This is all described in the excellent book *In Ruins* by Christopher Woodward, which is a good read if you’re interested in the paradox of ruins and why they cause both

pleasure and pain.

ANNE BOYD
PHILADELPHIA, PA

This sounds incredible! I did a project on these two lots during my Master’s at WashU. I have a timeline of the church and old photos I found in archives, as well as hand drawings of the church. If anyone wants to take a look you can see it here: <http://cargocollective.com/davidadkin/Let-There-Be-Light>

DAVID ADKIN
ST. LOUIS, MO

THERE'S ALWAYS NEXT YEAR

The North Side's Sisyphean march toward baseball glory began anew April 4 and, predictably, The Chicago Cubs opener saw the Philadelphia Phillies win 7-2. The Chicago Transit Authority had said the nearby Addison Red Line stop would be closed for the 100th season opener at Wrigley Field, but that "mandatory" maintenance was pushed back. Still, initial Twitter griping by some fans gave South Siders an easy comeback: last year the CTA shut down the entire South Side branch of the Red Line for the entire White Sox season.

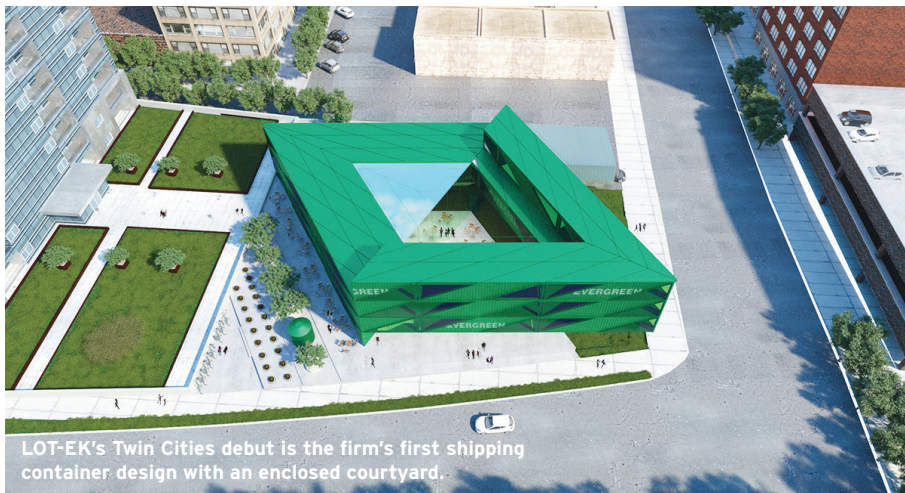
WELCOME HOME, CHIDM!

The Chicago Design Museum, our resident pop-up pantheon of graphic aesthetics, is looking for your help to mount the first exhibition in its new permanent home. They're planning a centennial show for the American Institute of Graphic Arts (hey, AIGA's as old as Wrigley!), and they've launched a Kickstarter campaign to get it funded. Eavesdrop's been known to drop in on ChiDM's shows since its inception, so we could be persuaded to part with some cash.

GRAFT THAT KEEPS ON GIVING

Chicago's terrible parking meter sell-off, which our former mayor used to paper over a budget hole on his way out, remains a headache. And it's part of the reason the website NerdWallet named Chicago the worst city in the country for parking. We're number one! We're number one! Sorry, while I was cheering **Mayor Rahm Emanuel** announced free Sunday parking—first offered as a bargain for longer paid parking hours the rest of the week—will likely be rolled back in some neighborhoods. Apparently you'll soon be able to pay via app. Or you can pull a **George Costanza** and scour endlessly for a free spot. Apply yourself!

SEND CATCHER'S MITTS, KICKSTARTER KITS, AND PARKING TICKETS TO EAVESDROP@ARCHPAPER.COM



LOT-EK's Twin Cities debut is the firm's first shipping container design with an enclosed courtyard.

COURTESY LOT-EK

CAN DO continued from front page firm Snow Kreilich Architects to up-cycle shipping containers into a 16,500-square-foot commercial building. Approximately 60 identical 40-foot containers, all sourced locally, comprise the mixed-use building. "The container is possibly the most global, and the most local object that we manufacture. It's a universal system. They're the same containers all over the planet," said LOT-EK's Giuseppe Lignano.

The Minneapolis building will be the firm's first to enclose an outdoor lobby

area within a 100-by-100-foot rhomboidal "donut" shape. Restaurants, cafés, and retail will occupy the first floor of the building, while offices for the digital marketing firm The Neat Pig Group will take up the top three levels. They will share that space with a smaller suite of small-business incubators.

That rhomboidal shape is split structurally, with one triangular half resting on an existing underground parking garage, reducing the need for additional foundation on the wetland site. The other triangular half is lifted one level.

The site at 5th Avenue

North and 3rd Street North has been vacant for decades. Lignano said the new building furthers the neighborhood's transformation while honoring its industrial past. "And also the building becomes like a beacon," he said, "a new idea, a progressive building that could become a little bit of a hub."

LOT-EK's previous work includes a makeover of New York's Pier 57 in West Chelsea; Puma City—a portable, mixed-use structure in Boston; and a barge-borne exhibition space for Google in the San Francisco Bay. All those projects use shipping containers as their basic structural elements.

Robert Silman Associates, Solution Blue, and Ericksen Roed Associates are providing engineering services to the project, which is currently working its way through the Minneapolis public review process. Opening is expected in early 2015.

CB



MARCIN CYMMER

> FULTON MARKET KITCHEN
311 North Sangamon Street
Chicago, IL
Tel: 312-733-6900
Designers: Alex Morales and Daniel Alonso

In an area synonymous with celebrated galleries and restaurants, it is only natural that the simply titled Fulton Market Kitchen would fuse art and cuisine. With sweeping street art murals, suspended sculptures, and a wall made of mangled wooden chairs, it is a restaurant, lounge, and veritable art gallery all its own.

Located in the former Victor Hotel space at 311 North Sangamon Street, Fulton Market Kitchen is 6,000 square feet of "controlled chaos," according Alex Morales, the Guatemalan-born artist who designed the space with his partner, Daniel Alonso.

Morales filled up a bit of wall space with his own paintings and sculptures, which explore texture through recycled materials. Much of the Kitchen's fixtures are recycled as well, from tables topped with repurposed bowling lane wood, to a bar festooned with vintage luggage, to industrial ceiling lights that seem straight out of the film *Metropolis*.

Morales and Alonso are behind a slew of other popular Chicago restaurants, including Tavernita, Hubbard Inn, and Untitled. At Fulton Market Kitchen, they invited nearby artists to collaborate on works, which will rotate throughout the year. Local charities will receive a portion of the proceeds from art sold at the Kitchen. Contributing artists so far include Erni Vales, Erik DeBat, Franklin Riley, and Dominic Sansone. **CB**

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A military building turned corporate headquarters adds natural light and salvaged wood to soften the fortress-like Bauhaus structure.

The concrete mass at 400 South Jefferson Street in Chicago was for a long time the last place American soldiers saw before departing for military duty overseas. The Alfred Alschuler & R. N. Friedman building opened in 1946. Its curved corners and central tower jutting up in between striped bands of masonry are vintage Bauhaus—its style in service to the sheer bulk of the building, which takes up nearly a whole city block in Chicago's

Near West Side.

When food conglomerate Sara Lee broke up its operations into several smaller companies, the North American meat business, Hillshire Brands, announced it would restore and renovate 400 South Jefferson to the tune of about \$30 million. Sara Lee was based in Chicago for more than 60 years before moving to Downers Grove in 2005, so the return of Hillshire Brands was somewhat of a homecoming. The

city offered up to \$6.5 million in tax increment financing to make it happen.

Hillshire's new headquarters, which opened in late 2013, installed a plaque commemorating the building's military history. And while its design team swapped some bands of solid brick for a wealth of new windows, they benefitted from the building's fortress-like sturdiness. "The strength of the building was about as solid as a rock," said

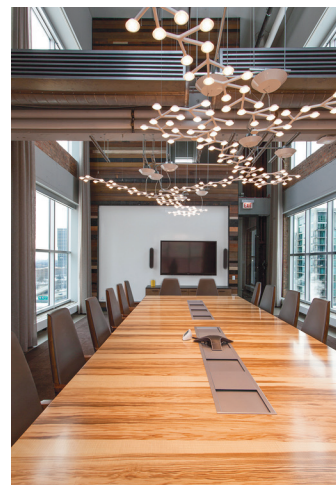
Bryan Tunison, senior project manager with engineering firm Proteus Group, who worked with Sterling Bay on the project. "It was built like a bomb shelter."

Bent glass wraps around the building's curved corners, continuing a ribbon of Guardian SunGuard SuperNeutral 68 windows. "The low tint, clear color complimented the 1940s streamlined aesthetic of the building," said Proteus' Mark Maturo in a statement.

In relishing raw steel, rough wood finishes, and exposed concrete floors, the interiors stand in stark contrast to Sara Lee's suburban corporate campus. Universal 8 by 8 workstations populate the flexible space, where large, isolated offices once stood. Interior designers at Perkins + Will salvaged wood from two water towers demolished during construction. They sliced the thick slabs of wood, revealing blacks, reds, and whites that would lend texture and authenticity to alcoves and accent walls throughout the building. Original bronze doors remain as wall art throughout the building. "The word [the client] used was 'authentic,' but nothing too precious," said Perkins + Will associate principal and project manager Eric Mersmann. "A lot of the vernacular for the space came from the industrial building itself."

The 230,000-square-foot office space is spread over four main floors and three tower floors above that. Each floor has a main gathering space, with only one coffee and food pantry area per floor, which Mersmann said is meant to encourage community among employees. The single-room tower floors contain conference rooms and an employee lounge, with a roof deck made of ipe wood.

The celebrity test kitchens may belie the building's Spartan history, but the speed of the project's realization recalls its military regimen. In less than 12 months the design team drew up plans, got permits, and built out the space, from start to finish. **CB**



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Giving NEIU's commuters a sense of place.

JGMA

BETTER THAN A BILLBOARD

continued from front page Chicago's JGMA, the rhomboidal volume sports bright green fins and unusual angles that vary its appearance from several sides. The 55,000-square-foot building is situated along the Kennedy Expressway, exposing it to almost half a million cars per rush hour commute. "It's blatantly a billboard, we know that," said JGMA's Juan Moreno. "But we wanted it to be more."

The building's form is more than mere advertising. A long corridor on the ground level curves along with the expressway, lifting the structure's mass away from the noise with a black wall that serves as acoustic shielding. Inside that corridor, the windowless

sound buffer shelters a student art gallery, providing uninterrupted circulation that is mirrored across all three floors.

Between the wall and the highway, portions of North Drake Avenue and West Henderson Street are shown in renderings as bike and pedestrian paths, closed to traffic. Moreno said they are exploring transit accessibility options for the Avondale campus, which is a few blocks from the Belmont stop on the Blue Line. The campus borders Metra tracks to the north, but the nearest stop is almost a mile away.

NEIU currently lacks a sense of community among commuting students, Moreno said—something he hopes the new building will change. "The entire building is riddled with opportunities

for the students to spend time there and just hang out with each other," he said. "It's as much a community center as a building for coursework."

Large windows collect light in gathering spaces throughout the building. Instead of faculty offices, the third floor is occupied by music and art studios, a student lounge and meeting rooms. In all, Moreno said, the building has some 2,000 square feet of unprogrammed space, included at the direction of NEIU.

Vertical fins affixed to the building's skin are engraved on both sides with each letter of the university's name, benefitting from the eye-grabbing tendency of their bright colors. But they also serve a purpose, shading the upper floors' ample windows from solar heat gain and glare. Photovoltaic panels on the roof contribute to the project's goal of LEED Gold certification.

A particularly brutal Chicago winter—the worst since 1979—has frustrated construction, but the project is on track to open in August for the fall academic year. **CB**

ARCHITECTURAL CONCRETE IS BACK IN UPSCALE INTERIORS

Concrete Thinking

When Graham Thompson opened an outpost of Optimo Hat Co. in Chicago's historic Monadnock Building, he wanted his shop's aesthetic to match his dapper custom hats and the rustic South Side where he makes them. The store had to be chic with an industrial flare. So amid the wooden hat forms, steel display racks, and a rainbow of fedoras that start at \$650, Thompson installed a custom-built concrete countertop and a set of matching concrete bar stools. The curve of the countertop matches the curve of a brim. The slab is functional, too, equipped with a radiant heating element and a steam vent for minor topper touch-ups. "It kind of goes with our industrial production look," said Thompson of the charcoal gray countertop's elegant sheen. "We have tools and machinery that are of that color and feel and era."

Optimo's countertop was fabricated by Tom and Karen Bucina of Chicago Concrete Studio. The husband-and-wife team work out of a space in the Beverly neighborhood once owned by the Wilbert Vault Co. The company does between eight and 10 projects a month at \$90 to \$100 per square foot. Every job is completely customized, down to the color. "Oh, you want it purple? Well we'll make it purple for you," said Tom Bucina. "Or you want it 15-feet-long, solid, one piece? We'll make that for you."

Bucina also created custom concrete wall panels for the new Saint Laurent boutique in the Waldorf Astoria Hotel in Chicago's Gold

Coast neighborhood, and is working on a second set for the couturier's boutique in King of Prussia, Pennsylvania. "They like the warmth of it, the subtle nuances that only concrete can give you," said Bucina of his high-end customers. "You can't get that from marble."

But high-end concrete can sometimes hit the same price as traditional luxury stone, said Paul Audrain, principal at Chicago-based Audrain Architecture.

Elwin Robison, professor at Kent State University's College of Architectural and Environmental Design, attributes some of concrete's return to popularity to the influence of architects like Frank Gehry, who sparked a "revolution of curves and warped surfaces." The popularity of industrial-spaces-turned-condos doesn't hurt either. "When we say industrial, we don't mean we're throwing the floor down like it's a warehouse," said Tony Vera, owner of Chicago-based VeraFloor Systems, which specializes in premium concrete floors. "The industrial look still calls for a nicely finished floor."

Vera's customers include Marc Jacobs International and BCBG Max Azria Group, but the bulk of his work is residential. Vera installs an average of five floors per week during busier times, as well as several large projects a year that total more than 30,000 square feet. Prices range from \$3 to \$7 per square foot, and the company's sales grew 46.1 percent last year to \$1.9 million from \$1.3 million in 2012. "We're taking out wood in a lot of newer condominiums downtown," said Vera. "We'll come in and take out the wood floor that was sold with the unit and put in our product. Wood is beautiful but it's just not what they want."

ROBIN AMER



WALL = SCULPTURE

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CHRISTIAN ACTIVITY CENTER



ZIRVE UNIVERSITY HOSPITAL



MEJILLONES MASTERPLAN

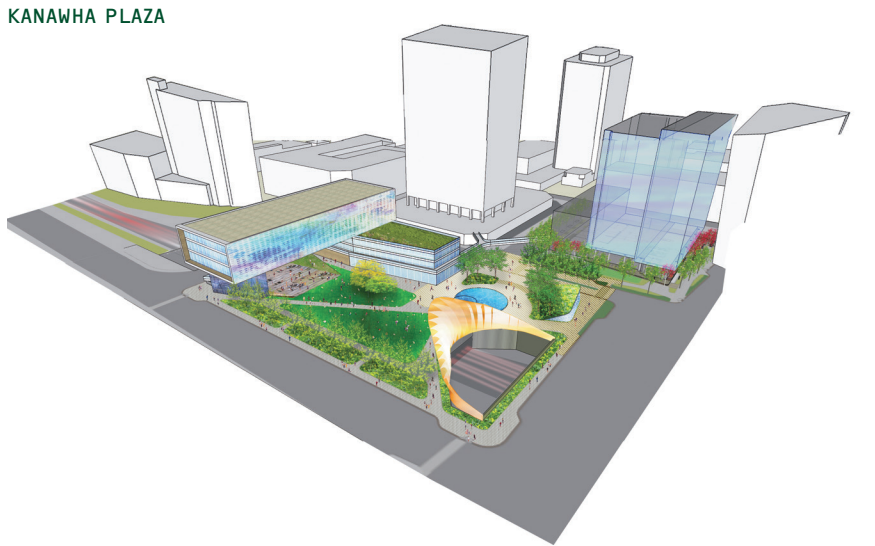


FORUM STUDIO

GATEWAY PLAZA



KANAWHA PLAZA



Clayco celebrates its 30th anniversary this year, but the massive design-build firm is looking forward, not back. Last year it moved its headquarters from St. Louis to its offices in Chicago's Jewelers Building, 35 East Wacker Drive.

That is where *AN* caught up with the firm, which had just opened the second exhibition in its Art & Science series—an ongoing art show in the firm's downtown office. Amid a collection of photography from the University of Chicago campus, urban design practice principal Chip Crawford said that while the scope of Clayco's work is expansive, it aims to tread lightly.

"Where's nature at the design table?" asked Crawford, who joined the firm in 2012 after 28 years developing HOK's planning group and whose research interests include biomimicry and ecosystem services. He said incorporating nature as a design partner means more than just practicing landscape architecture. "We're developers, we're builders, and we're designers," he said. "It's really a radical partnership. We're all working elbow to elbow."

Forum Studio has been the firm's design arm since 1999, while Concrete Strategies handles construction. Clayco bills itself as a full-service real estate, architecture,

engineering, and construction firm. Such design-build practices are more common abroad, but have not caught on the same way in the U.S. The arrangement benefits clients because they have a better idea what a project will entail and cost from the start.

Clayco is active worldwide, but is also heavily invested in its own backyard. The firm's master plan for Pune, India, includes a seasonal lake for stormwater harvesting. At home, they are remaking public spaces from East St. Louis to Richmond, Virginia.

CB

CHRISTIAN ACTIVITY CENTER EAST ST. LOUIS, IL

In the heart of impoverished East St. Louis, a 22-acre park is meant to help stave off urban decay. No mere open space, the Christian Activity Center has space for community gardens, a farmer's market, and a band shelter to host performances by local artists and musicians. "They're trying to rebuild community through recreation," Crawford said. "It's way richer than just some soccer fields. You could change the way people feel about open space, create a sense of ownership."

GATEWAY PLAZA RICHMOND, VA

Around the corner from Kanawha, Forum is working on site design for a multi-tenant office tower at the crossroads of two major highways that will serve as a portal to downtown. Home to law firm McGuire Woods' corporate headquarters, the tower opens onto landscaped areas that function both as private retreats and stormwater retention areas. With artists Carol Mickett and Robert Stackhouse, the firm drew on the nearby James River to develop a visual vocabulary for the site around the concept of "flow."

ZIRVE UNIVERSITY HOSPITAL GAZIANTEP, TURKEY

This multi-phase master plan calls for a regional education hub near the Syrian border in Eastern Turkey. Public spaces link the campus buildings, which will include a hotel, gym, dormitories, a hospital with almost 500 beds, a conference and education center, and a 300,000-square-foot medical research facility.

KANAWHA PLAZA RICHMOND, VA

Parking podiums constrict public space in downtown Richmond, where an underutilized three-acre park known as Kanawha Plaza can feel like an afterthought to the nearby highway. The winning bid for the James River Green Building Council's 2013 Green Spaces Design Competition, Forum's plan calls for 175,000 square feet of mixed-use development on site to help fund a rehab of the public space. Cantilevered over the park, the bulk of the building connects Kanawha to the urban fabric and serves as a projection screen for an interactive LED display.

MEJILLONES MASTERPLAN CHILE

In the town of Mejillones, situated along northern Chile's Pacific Coast, nearby copper mines are spurring unprecedented growth in the city's Angamos port. But the rapid development threatens the area's cultural heritage, and threatens to overshadow its touristic potential as a coastal destination in the Atacama Desert. By erecting a programmed berm full of pocket parks between the city's downtown and its industrial zone, Forum's design hopes to visually separate Mejillone's two faces. The landform could even harvest greywater for irrigation in the arid city.



Minnesota's Northrop Memorial Hall was once called the Carnegie Hall of the Midwest.

COURTESY UNIVERSITY OF MINNESOTA

ENCORE continued from front page on April 4, "reinvigorated with programs and spaces so it can be used all day long and into the evening," said Tim Carl, design principal.

The first order of business was shrinking the two-level, 31,050-square-foot, 4,800-seat performance hall into a four-level, 2,700-seat, 28,000-square-foot, horseshoe-shaped layout, thus eliminating 2,100 seats. In the elegant new auditorium, 80 percent of the seats are within 100 feet of the stage, as opposed to 20 percent.

HGA teamed with Arup to fine-tune the hall's acoustics, balancing direct and reflected sound through design to create a hall acoustically inspired by Amsterdam's Concertgebouw. The team saved the stage's beloved proscenium arch to provide historic continuity between old and new, but recast several of the enormous medallions (the originals now hang in the new upper lobby) in resin for acoustic transparency. HGA also shaped the balconies using "a complex curvature that's about the reflection of sound," said Carl. A 10-foot-high band of grooved stone at the front of hall uniformly disperses sound.

The hall's reduced footprint created square footage for a new lobby ringed with balconies, and space on either side of the building for academic programs. The University Honors Program, Institute of Advance Study, and the College of Design's Travelers Innovation Lab now occupy the east and west sides of the building with offices, classrooms, lounges, and meeting space. "We all understand the inherent social value of getting people from different disciplines to bump into each other and talk," said Carl. "Innovation comes from having Northrop's arts programming

coexist with academic programming in one building."

The theater's renovation also included new crossover space. Formerly, performers on Northrop's international dance series had to make their way through the basement. The building also needed a loading dock. To maintain the building's symmetry while meeting programming needs, HGA added a rehearsal space with floor-to-ceiling windows, above which is a classroom and founders' room, and a 168-seat lecture/recital hall with electro-acoustic enhancements that adjust automatically.

To ensure continuity between old and new—a University directive—the same exterior brick and stone were used on the additions. New windows use the framing color and proportional symmetry of the existing ones. "From a distance the building in its entirety is seamless," said Carl, "and up close you can detect the more contemporary line of the addition."

Memorial Hall, Northrop's grand three-story entrance, has been restored. Six large stone urns once inside the hall now greet patrons on the stairs to the first balcony. Terrazzo floors, bronze and red oak accents, and buff plaster walls "reflect the quality of the historic architecture," said Carl.

"The project initially met with some controversy by historic preservationists," he added. "But the University realized it couldn't preserve the original hall; it simply couldn't be adequately utilized. So one of our key concerns was respecting the historic building, while inserting new programming for the 21st century. You know the new isn't historic, but it feels like it belongs."

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AN looks into four naturally lit contemporary gallery spaces and talks to Andy Sedgwick of Arup—which completed the lighting schemes of all of these projects—who Thomas Phifer calls, “the premier daylight designer in the world.”

THE ART OF DAYLIGHT

NIC LEHOU; DRAWING: COURTESY ARUP

**RENZO PIANO PAVILION,
KIMBELL ART MUSEUM
FORT WORTH, TEXAS**

**ARCHITECTS: RENZO PIANO
BUILDING WORKSHOP, KENDALL/
HEATON ASSOCIATES
LIGHTING DESIGNER: ARUP**

Louis Kahn’s Kimbell Art Museum building in Fort Worth, Texas, is widely considered to be one of the best spaces in the world for viewing art, largely because of the silvery ambient light that seems almost magically to fill the concrete vaults of its roof. When the museum commissioned Renzo Piano Building Workshop to design an expansion to this lauded facility, it requested a continuation of that light condition. “I think the light in the Kahn building is just about the most ideal light I’ve ever seen for viewing paintings and other art,” said Eric Lee, director of the Kimbell Art Museum. “That’s the gold standard for us.”

Of course, the Kimbell did not want a knock-off. The institution wanted the addition to be very much grounded in the 21st century, and sustainability was central to this goal and a large part of the lighting design.

The new building, known as the

Piano Pavilion, bears a close kinship with the architect’s other Texas art spaces—The Menil Collection in Houston and The Nasher Sculpture Center in Dallas—in that it features skylit galleries with sunlight modulating hardware on the roof. While the previous projects feature static shading systems—baffles and perforated screens—the Kimbell addition’s skylights are shaded by a motorized louver system outfitted with photovoltaic arrays. The louvers open to face south, for the PVs, at five-degree increments. Arup provided the museum with a table indicating the number of footcandles of daylight a setting will provide at any time of year, giving curators the flexibility to set the amount of light for an exhibition’s needs. The louvers are also capable of rotating 180 degrees to protect the skylight and the PV arrays from North Texas’ not infrequent hailstorms.

While the louver system opens and closes, it does not react to changes in sunlight throughout the day. “We didn’t want to sanitize the daylight so much,” said Andy Sedgwick, a partner in Arup’s building engineering team, which designed the project’s lighting scheme. “One of the special features of natural light is the fact that it is

variable and it changes all the time. If you have a system that is too reactive you can kill that dynamism and you lose some of the special character.” It does however close completely during off hours and opens minutes before the museum begins accepting visitors. This cuts down on heat gain from the sun during the long summer mornings, reducing demand on the HVAC system.

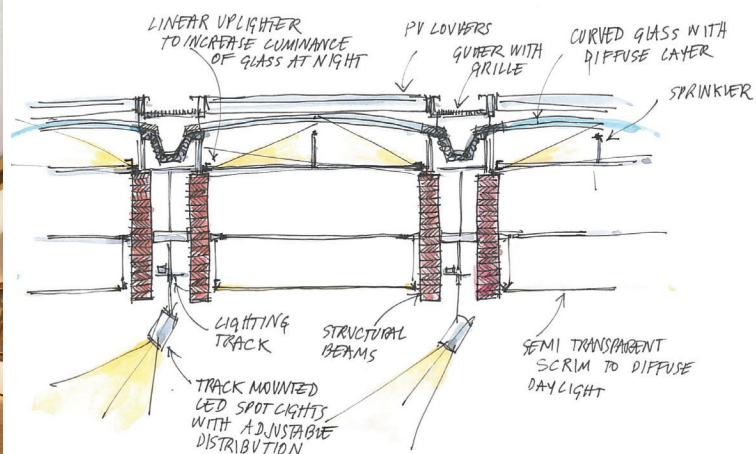
As with the Kahn building, the Piano Pavilion features a mix of daylight and electric light. The tops

of the structure’s 100-foot-long, 54-inch-deep, 8-inch-wide, laminated, twinned Douglas fir beams are outfitted with LED strips that project 3000K white light up at the bottom of the fritted, low-iron, UV-filtered IGUs that makeup the skylight. This maintains a gentle glow that shines down into the galleries during cloudy days and in the evening. Fabric scrims span between the beams, further diffusing the light.

The galleries’ art lighting is provided by a set of track-mounted LED fixtures from California company

Xicato. The luminaire provides high color rendering (95 CRI, which is phenomenal for an LED product) and show consistent color from fixture to fixture, even after years of use. “We’ve found it very compelling among museum professionals,” said Sedgwick. “They like it at least as much as tungsten halogen.” These are 3000K, which is apparently Piano’s favorite color temperature. “Everything that Piano does is 3000K,” continued Sedgwick. “We normally don’t have to ask.” **AARON SEWARD**

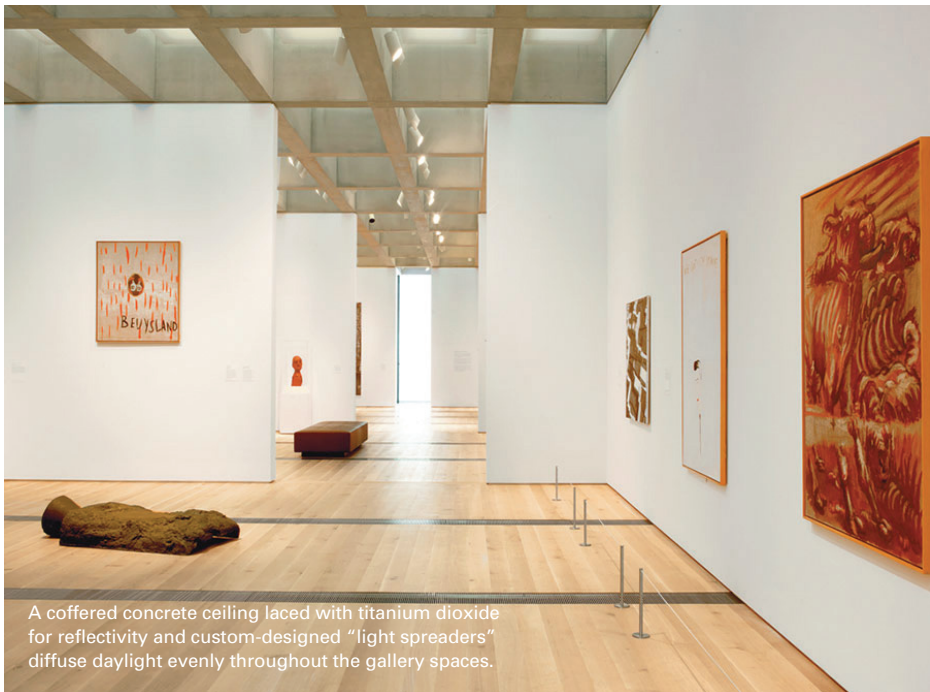
A motorized louver system outfitted with PVs allows curators to dial-in the ideal amount of natural light for any exhibition.





ST. LOUIS ART MUSEUM EXPANSION
ST. LOUIS, MISSOURI

ARCHITECTS: DAVID CHIPPERFIELD
ARCHITECTS, HOK
LIGHTING DESIGNER: ARUP



A coffered concrete ceiling laced with titanium dioxide for reflectivity and custom-designed “light spreaders” diffuse daylight evenly throughout the gallery spaces.



TOP TWO: ALISE O'BRIEN; BOTTOM LEFT: WESLEY LAW; BOTTOM RIGHT: J.J. LANE

A recent expansion of the historic St. Louis Art Museum by David Chipperfield Architects and HOK features a sophisticated daylighting system that fills the galleries with diffused natural light without adversely affecting the art on display. “It is so natural that you can feel a cloud go over head,” said HOK’s Roger McFarland. Designed with Arup, the system pipes in natural light through a coffered concrete ceiling, diffusing it throughout the galleries with a custom tool dubbed the “light spreader.”

The building’s 16-foot-high, 40,000-square-foot cast architectural concrete ceiling is divided into a grid of 680 rectangular coffers, each four feet deep. Centered above each coffer is a skylight made of double-glazed, low-iron glass. Light enters through the skylights and bounces off the concrete, which is infused with titanium dioxide to lend the material 55 percent reflectance—nearly twice

that of typical concrete.

The field of skylights cannot be seen from outside. Adjoining the Cass Gilbert-designed “Palace of Fine Arts” constructed for the 1904 World’s Fair, the new East building does not trumpet its presence. Instead it is low and flat, in deference to its historic neighbor.

Once light enters the skylights and bounces around among the reflective concrete, it meets the light spreaders, which are suspended within each coffer. The spreaders diffuse the daylight further, creating an even distribution of light throughout the space. The light spreaders were made by St. Louis-based fabrication studio Troco. They consist of two layers—a 3form plastic light-diffusing material and a micro-perforated Barrisol fabric layer underneath—held in a rectangular aluminum frame. Between the two layers is a void that traps sound, so it also serves as an acoustical panel. By varying the density

of the fabric, the design team fine-tuned the amount of light and sound reduction necessary across the ceiling grid.

The light spreaders also conceal the addition’s mechanical systems, which are floated within the space between the coffers and the skylights. “So it acts as a light diffuser, the light fixture holder, the sprinkler containment portion, the acoustical panel, and the track to hold exit signs, speakers, security cameras, and motion detectors,” said McFarland. “It’s a work horse. It hides all of the stuff that you have to have in a museum.”

To test the system, the design team made a full-scale, 20-by-30-foot mock-up of the gallery and ceiling grid, even drawing up Mondrianesque paintings to test the appearance of different colors under the diffused light. Even after the real thing was built, museum workers tested each surface with humidity and light meters for months

before the space opened to the public.

The unique lighting system traps heat near the ceiling, which helped the new wing achieve a 29 percent reduction in energy use compared to a museum with conventional systems, helping it earn LEED Gold certification.

After viewing hours, the building’s automation system pulls shades over the skylights and the addition’s two floor-to-ceiling glass walls that look out over St. Louis’ Forest Park. A Hyperium software system tracks the movement of the sun throughout the day, fine-tuning with shade controllers manufactured by Lutron an assemblage of translucent and blackout shades to maintain a consistent level of light within the interior. The system also supplements the Midwestern daylight with fluorescent fixtures positioned above the ceiling coffers, which fill in for daylight during evening hours.

CHRIS BENTLEY

Q&A> ANDY SEDGWICK

Andy Sedgwick is a director of Arup’s building engineering team with a specialty in designing natural lighting schemes for art spaces. He spoke to AN about recent trends in daylighting galleries, the technologies that are enabling this movement, and how

his team works with architects.

AN: It seems that there is a trend in contemporary museum design to bring more and more daylight into gallery spaces. Do you think this is true and, if so, why do you think it is a growing tendency?

Andy Sedgwick: In the mid 20th century there were two contrasting

approaches. To be overly black and white about it, there was a Northern European approach that used daylight to create a well-lit room, a place where light fell more or less evenly on all the walls, creating a setting to show art in a neutral way. On the other end of the spectrum was the North American approach, where, in the 1940s and 50s, following the great

Beaux Arts Museums that included natural light, there was a tendency to go black box for museum space, partly to allow the curators to create much more mediated viewing experiences. When you just have electric light you can create a story, you can emphasize things or deemphasize others using light. There was also a feeling that using electric light was

safer and would expose the works of art to less damage, or the threat of damage, from natural light. I think we’ve seen things swing the other way for a number of reasons. One is a lot of European architects who have found favor for large cultural projects in North America—Piano, Chipperfield, Herzog & de Meuron, and others—they have brought that Northern



PÉREZ ART MUSEUM MIAMI
MIAMI, FLORIDA

ARCHITECTS: HERZOG & DE MEURON,
HANDEL ARCHITECTS
LIGHTING DESIGNER: ARUP

In Miami, “art” usually means “art deco.” But that is exactly what Herzog & de Meuron did not want for their Pérez Art Museum Miami (PAMM), formerly the Miami Art Museum. “Art deco was about decorated boxes with no great relationship and exchange between inside and outside,” said senior partner Jacques Herzog. “The greatest thing,

however, that makes Miami so extraordinary is its amazing climate, lush vegetation, and cultural diversity.” The firm’s design, a glass cube nestled inside a concrete and wood canopy, rejects the interiority of most art museums in favor of direct engagement with its surroundings. “Given the spectacular location, PAMM offers more views than any

A concrete and wood canopy protects the museum’s extensive glazing from direct exposure to the intense Miami sun.

of the other 14 museums we built,” said partner in charge Christine Binswanger. “To balance the intimate and concentrated experience of contemporary art with exposure to the sea and the park was one of the things we wanted to achieve.”

Achieving this balance between openness and intimacy was a particular challenge when it came to the museum’s lighting design. Herzog & de Meuron and executive architect Handel Architects employed the canopy not just to shade the outdoor spaces, but also to protect PAMM’s extensive glazing from the Miami sun. Inside the museum’s galleries, the architects opted for a combination of incandescent track lights (by Litelab) for highlighting the artworks and four-foot-long fluorescents (by Bartco) for ambient light. The addition of the fluorescent lights was “done both as a lighting strategy and as an energy-saving strategy,” said Matt Franks of Arup, the project’s lighting designer. An automated dimming system adjusts the artificial light according to the amount of daylight coming in.

The fluorescent lighting system extends throughout many of the museum’s non-gallery spaces, including the shops and bar. For the cafe, Herzog & de Meuron designed a simple custom pendant fixture—“really just a suspended lamp with a simple bulb in it,” said Franks. Daltile manufactured custom ceramic escutcheon plates, again designed by Herzog & de Meuron, for the ceiling and pendant lights in the museum’s restrooms and secondary corridors. For PAMM’s third-floor offices, Litelab fabricated an aluminum pendant task light based on the PAR-38 spotlight. Similar lights, also by Litelab, hang in the museum gift shop.

“In the outdoor space, within the space of the canopy, we made the conscious decision to not continue the same lighting from inside, but rather create a space that would be darker, more comfortable, and more environmentally friendly,” said Herzog & de Meuron. “The contrast of the lighting from outside to inside also allows the interior spaces to glow from within.” To diffuse the light from the column-mounted fixtures (BEGA-US), the designers commissioned custom bent steel plate light reflectors from American Architectural Metals and Glass.

The straightforwardness of PAMM’s lighting strategy belies the extent to which Herzog & de Meuron’s inside-out approach to museum design depends on its success. “The design concept is pretty simple,” concluded Franks, “but there’s a lot of thought that went into how everything fit together.” **ANNA BERGREN MILLER**



IWAN BAAH

European approach to gallery design. Another part of it is that when you’re investing in a major new cultural building, you want to see it, not just from outside, but on the inside too. Using daylight in an ambient way means you can see the rooms and see the architecture. It’s a more enriching experience for those visiting as well as those funding the spaces. You get more bang for your buck. I’d like to

think that some of it has to do with understanding daylight better, how to handle UV radiation and quantify exposure of art to light. Daylight is a complex science and such a variable phenomenon—the sun moves in sky, clouds move under sun, it varies where in the world you are. We can be very responsible with daylight now. Finally, there is an imperative on many projects now to work toward

more sustainable design solutions. Historically, tungsten halogen or incandescent light sources have been used every operating hour of the day to light gallery spaces. They’re energy intensive and bring a lot of heat that has to be taken out with AC. A museum with a good daylighting design can run without electric light for much of the year.

Do you find that clients and architects are more receptive to daylighting galleries these days? Generally I find that to be the case. Sometimes the role of daylight is still an open question. There are still some institutions who, perhaps because they require complete flexibility, may need designs that are very safe in terms of light. Sometimes that may be designed as a daylit gallery with

ways of blacking out the light. I find it’s helpful to take clients on a tour of recent and contemporary projects to get informed about the value and the risks of natural light. My experience is that, after those tours, everyone had fallen in love with the daylit space.

Have there been recent technical innovations that have made it easier to use daylight in gallery

CORNING MUSEUM OF GLASS EXPANSION

ARCHITECT: THOMAS PHIFER
AND PARTNERS
LIGHTING DESIGNER: ARUP



On sunny days, the museum's glazed, translucent roof will allow as many as 425 footcandles of natural light into the gallery spaces, eliminating the need for electric lighting.

Unlike paintings, drawings, or photography, glass can take a lot of natural light. So for the planned addition to the Corning Museum of Glass, Thomas Phifer and Partners decided to make natural light a central idea of their

design. An enclosed "porch," offering views out to the museum campus, rings the glass-walled pavilion. The galleries are set within entirely opaque, load bearing concrete walls, focusing visitors' attention on the

works inside.

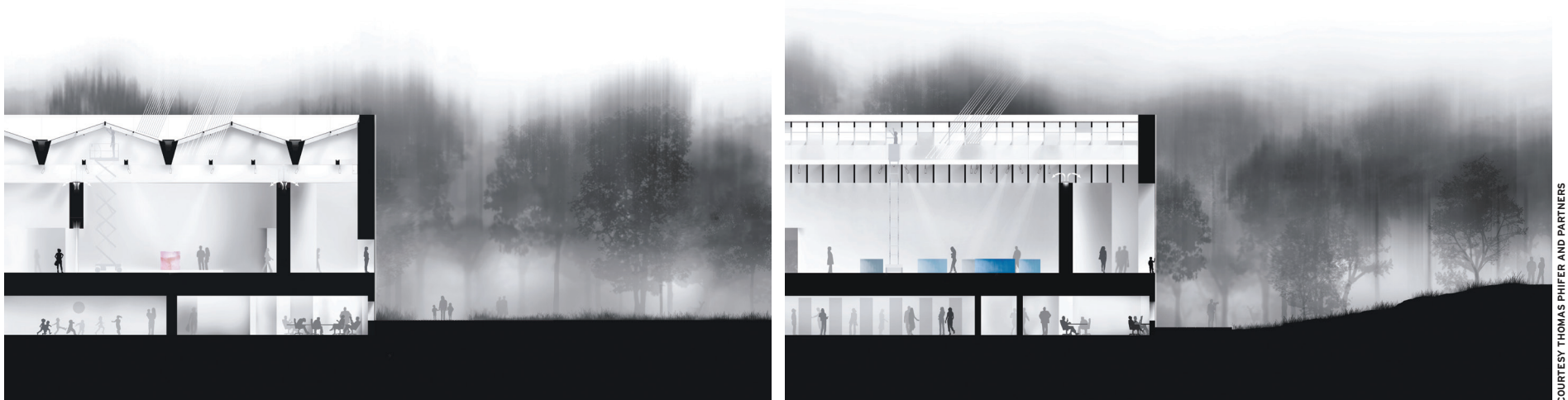
Phifer worked closely with Arup's lighting design studio to study the particular qualities that daylight brings to the medium. "Glass loves light, it throws it and becomes

luminous," said Phifer. Because most of the works will be displayed on pedestals or on the floor, rather than hung from the wall, the architects wanted the light to come directly from above, rather than through pointed spots. This helps to diminish shadows and silhouettes.

An entirely glazed ceiling of 4-by-6-foot glass panels, roughly 10 percent transparent, 80 percent translucent, and 10 percent opaque, will flood the space with daylight, while also creating a "dappled light effect," according to Phifer. On sunny days light levels could reach up to 425 footcandles, and most days the galleries will require no artificial light at all.

Massive 4-foot-tall, 60-foot-long concrete beams support the glass ceiling. At only three and a half inches thick, the beams act like fins or diffusers, and rest on top of the gallery walls, which curve and bend to create highly irregular, sculptural spaces. The ventilation and climate control systems, embedded within the concrete, circulate air through the top of the walls, eliminating visible vents. The height of the beams also allows the electric lighting—necessary at night on the occasional dark day—to be similarly concealed. Placed at the top of the beams, LSI halogen track lights will only be visible when looking directly up at the ceiling. The designers considered LEDs, but did not feel that the technology at this point was capable of producing an even distribution of light across the roughly 24-foot distance from tops of the beams to the floor. "It needs to be as seamless as possible, and we aren't sure the technology is there yet," said Phifer.

On working with Arup, and Andy Sedgwick in particular, Phifer said: "Andy is the premiere daylight designer in the world." And on the importance of bringing natural light into museums: "It brings a full spectrum of color into viewing art and it grounds the architecture and the art in the place where you are." **ALAN G. BRAKE**



COURTESY THOMAS PHIFER AND PARTNERS

spaces?

There are now a lot of laminates that can go into a glazing system that do a very effective job of filtering out UV radiation without coloring the light. Twenty years ago it was a real battle to find something that met the sweet spot. Now there's a range of products that have a high light transmission while reflecting heat back out. Natural light can be very energy

efficient if it doesn't bring heat with it.

When does your team typically get involved in a project?

We're normally in right at the beginning because there are discussions to be had around things like whether the gallery spaces need special flexibility, whether they have partition walls, or a fixed lot of rooms that are

there forever. It changes very much the approach to designing the roof, and there are many modern systems that need integrating into the roof. The AC needs to work in a compatible way with the lighting, as do the sprinklers and so on. These things need to be worked on together.

What other daylit art spaces does

Arup have in the pipeline?

There are three or four in North America. The Broad Museum in Los Angeles with DS+R, which is well on in construction. It has a very extensive top lit third floor gallery space, which is fully flexible. There's the Harvard Art Museum with Piano that is close to completion. It has a lot of daylit galleries, but also a major conservation space on the top

floor that is the pièce de résistance. We're also working on the Whitney with Piano in New York. Here in Europe we have the second phase of the Tate Modern with Herzog & de Meuron, which is half way through construction now. We have a private museum in Holland, The Caldic Museum, for a very fine collection of late 20th century modern and contemporary art.

facades —

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Leslie Clagett



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PROFILE

MUSEUM BRANDHORST MUNICH, GERMANY

Appropriate to a museum, the polychromatic design for this facade acts almost like a large-scale abstract painting. This skin plays with the perception of the scale and plasticity of the building. The overall building envelope is seemingly divided into three interlocking volumes through the demarcation of different color fields.

Seen from afar, each of these color families merges into one overall neutral color. But when viewed at close range, it is clear each field is composed of seven different colors.

Manufactured by NBK Keramik, the facade was created in response to nearby structures. Berlin-based architecture firm Sauerbruch Hutton placed an array of terracotta rods in

front of colored, perforated aluminum sheeting to create a gentle veil on the outside of the structure. Sunlight shining on the face of the building casts a pattern of shadows that shifts throughout the day, further enhancing the design's dynamic effect.

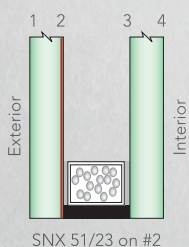
The technical design of the system is also dynamic as it uses the principles of a ventilated facade. Instead of being engineered as an impervious layer, caulked and sealed against the weather, the facade features open vertical joints that allow a free flow of air. The facade's ability to balance air pressure, along with a support system that drains rainwater away from the interstitial space, discourages water from entering wall cavities.

ARCHITECT: SAUERBRUCH HUTTON, BERLIN
STRUCTURAL ENGINEERS: INGENIEURBÜRO OTTITSCH
DAYLIGHT PLANNERS: ARUP LIGHTING, LONDON
FACADE: NBK KERAMIK

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MOSAIC VILLAGE

CHARLOTTE, NORTH CAROLINA



Part of Johnson C. Smith University, Mosaic Village is designed as a sustainable campus that embodies diversity, mobility, identity, and history. It serves as one of the first components of a culturally oriented master plan, and was visually inspired by the vital, rhythmic progressions of jazz music. The mixed-use project consists of a

299-bed residence hall, 7,000 square feet of retail space, and a 400-car parking deck.

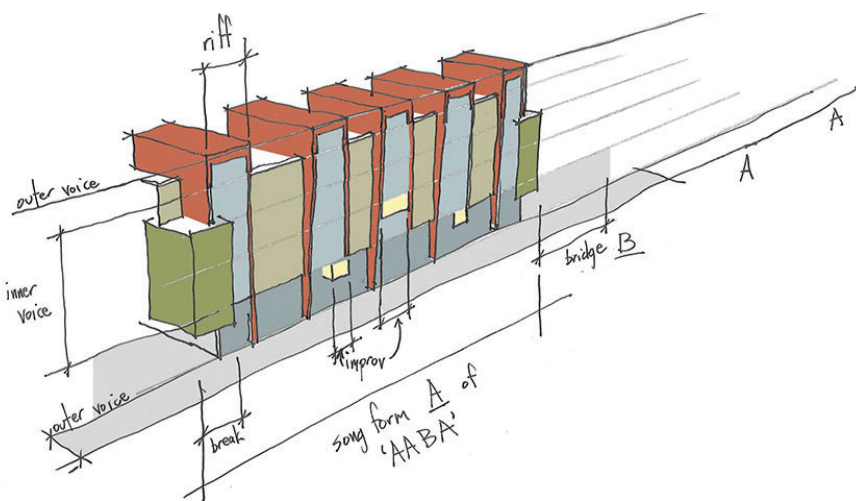
The architect for the project, Neighboring Concepts, is a multidisciplinary design firm that strives to deliver elegant and sustainable solutions to their clients. Opting for colorful metal panel cladding systems gave the firm not just the design flexibility

it needed to see their vision for Mosaic Village become a reality, but also a cost-effective and energy-efficient solution.

Specifying Kingspan Benchmark Design-wall insulated metal panels and Morin's single skin metal panels was a collaborative effort that focused on high-performance results. From the design stage through

installation, both the manufacturers' teams offered in-house support to the architects, associates, and contractors to ensure successful and timely project completion.

The project has been recognized as a winner of the Charlotte, NC section of the American Institute of Architects Urban Design Merit Award.



ARCHITECT: NEIGHBORING CONCEPTS
STRUCTURAL: STEWART ENGINEERING
M/E/P: SABER ENGINEERING
CIVIL/LANDSCAPE: WIRTH & ASSOCIATES



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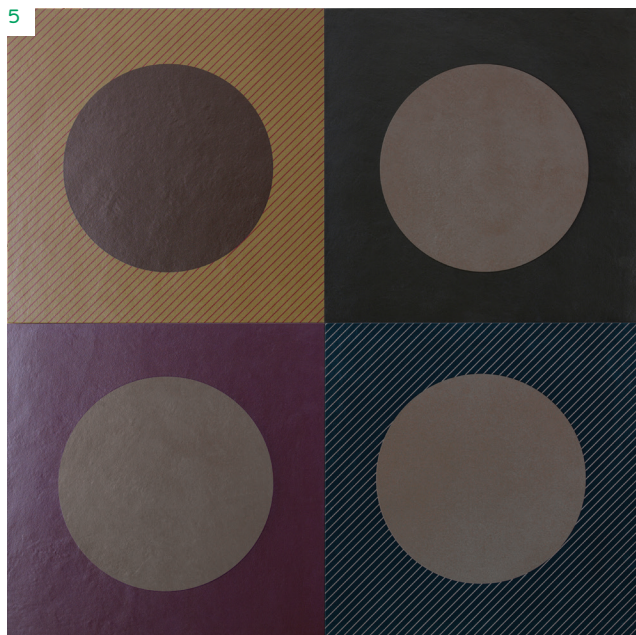
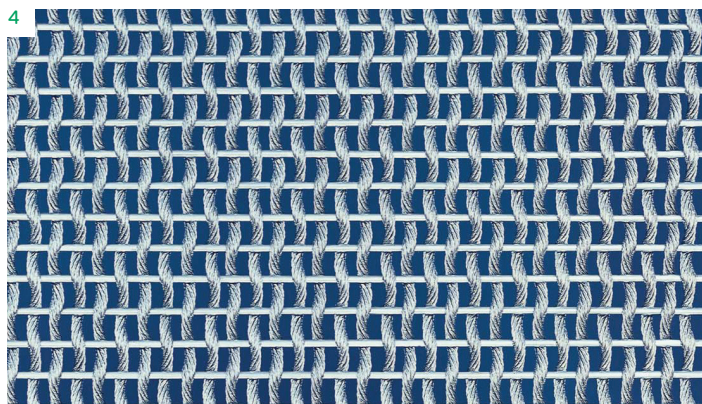
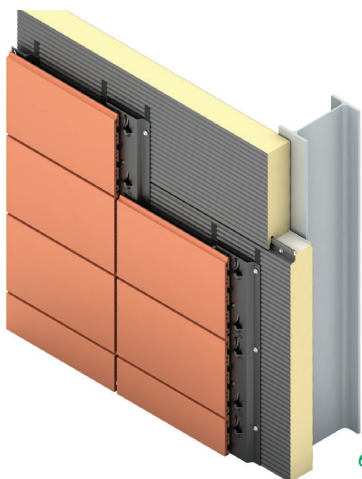
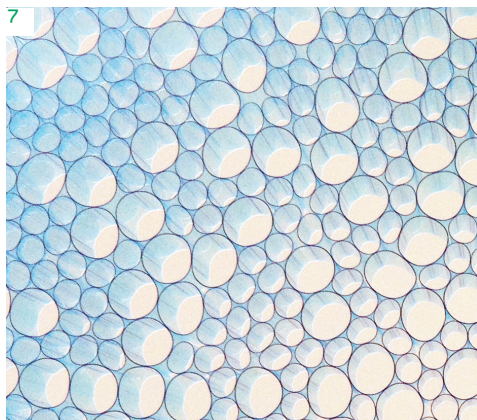
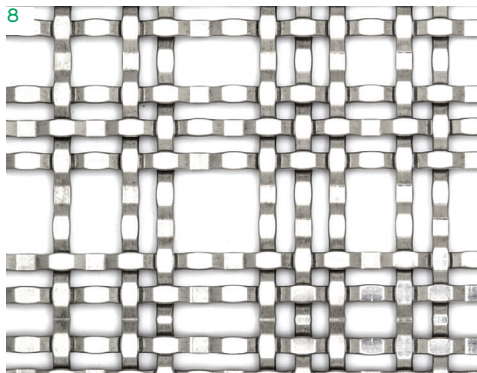


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CLADDING

It's All In A Facade

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1 COSENTINO
DEKTON

Available in sheets up to 126 by 56 inches and thicknesses of 8, 12, and 20 millimeters, this ultra-compacted material has a high compressive strength, is non-porous, and UV resistant. In ten colors and textures.

dekton.com

2 LAMBOO
RENEWALL

Laminated bamboo elements are up to 20 percent more stable than hardwoods, while milling, sanding, and finishing using conventional machinery. Its naturally occurring silica content resists insects and fungal agents. LEED eligible.

lamboo.us

3 TAGINA
DOT-TO-DOT

The system is based on three-dimensional ceramic modules that function as pixels when mounted to an exterior facade. Consulting with the manufacturer, designers can create their own limited edition glazed porcelain tiles for ventilated facades or other architectural coverings.

tagina.it

4 GKD METAL
FABRICS
BALTIC

With a range of visible light transmittance from .28 to .42 and a solar gain coefficient of between .20 and .29, this metal fabric makes an effective sunshade.

gkdmetalfabrics.com

5 LEA CERAMICHE
LEA LAB

Architects can create their own custom cladding imagery on ultra-thin, oversized ceramic panels using the Lea Lab digital printing technology. Upload high-resolution files, specify the panel size, and the manufacturing process is initiated.

ceramichelea.it

6 KINGSPAN
BENCHMARK

A single package system that combines the energy efficiency of IMPs with a proprietary carrier panel system that accommodates many cladding options, including aluminum composite material, metal composite material, ceramic granite, thin brick, plate, high pressure laminate, and ceramic tile.

kingspanpanels.us

7 PANELITE
CLEARSHADE
INSULATED
GLASS PANEL

A glazing solution that optimizes both daylight and solar heat control, its honeycomb insert is offered in a range of colors and patterns; customization is available.

panelite.us

8 CAMBRIDGE
ARCHITECTURAL
HASHTAG

In panels up to 96 inches wide, the flattened surface area of this rigid stainless steel mesh boosts reflectivity. Produced from 100 percent recycled materials, it is LEED eligible.

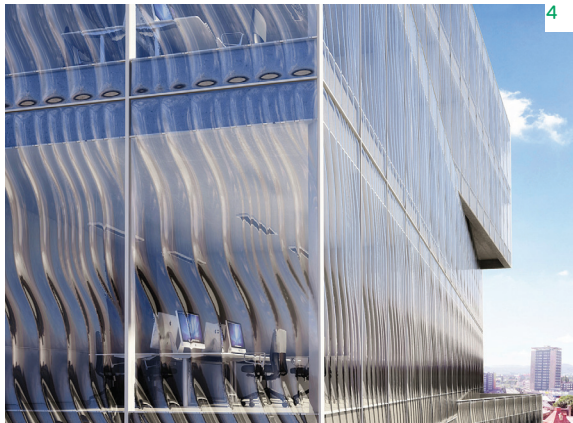
cambridgearchitectural.com



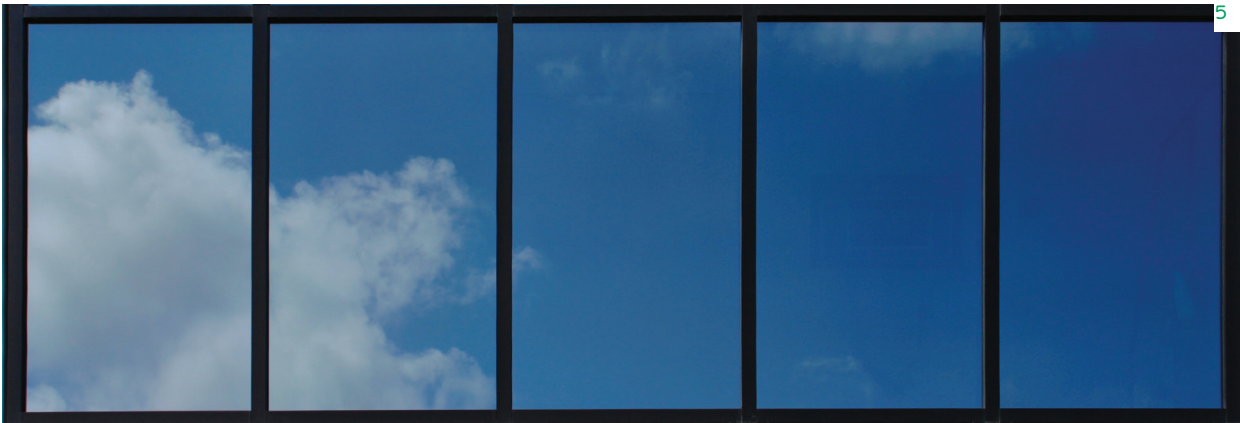
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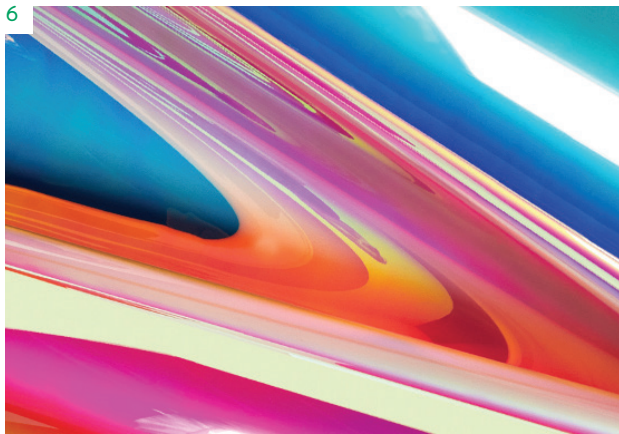


5

GLAZING

New glazing products excel in the extreme, on both performance and aesthetic fronts

TRANSPARENT THINKING



6

1 **3FORM**
KODA XT

Refined design meets extreme durability in this translucent polycarbonate panel material. Specially formulated for exterior applications, it is a cost-effective alternative to glass.

3-form.com

2 **YKK AP**
YCW 750 OGP

This low-conductivity pressure plate for curtain walls uses polyamide 6.6, which offers superior thermal and moisture performance when compared to fiberglass materials.

ykkap.com

3 **GUARDIAN**
SUNGUARD EC

This dynamic architectural glass product helps control heat and glare inside a building using electrochromic technology. The glazing transitions from clear to tinted in response to either manual or automated controls. The tint level can be adjusted to one of four settings.

guardian.com

4 **LASVIT**
LIQUIDKRISTAL

Designed by Ross Lovegrove, these glass panels can be fixed into construction profiles or into building construction-assembly grooves. Specialty colors and finishes are available; panels range in size from 80 by 8 centimeters to 270 by 370 centimeters.

lasvit.com

5 **VIRACON**
VUE-30

This high-performance glass coating allows designers to maximize window-to-wall ratios, while exceeding industry and current domestic energy code requirements for sustainable design. The coating is available on any Viracon glass substrate, and can also be combined with silk-screen patterns or digital printing.

viracon.com

6 **DICHROIC**
GLASS FINISHES
3M

These dichroic films reflect and bounce light based on the biological model of the butterfly wing. Available in cool and warm tones, the films can be applied to a variety of glass and plastic surfaces.

3MArchitecturalMarkets.com

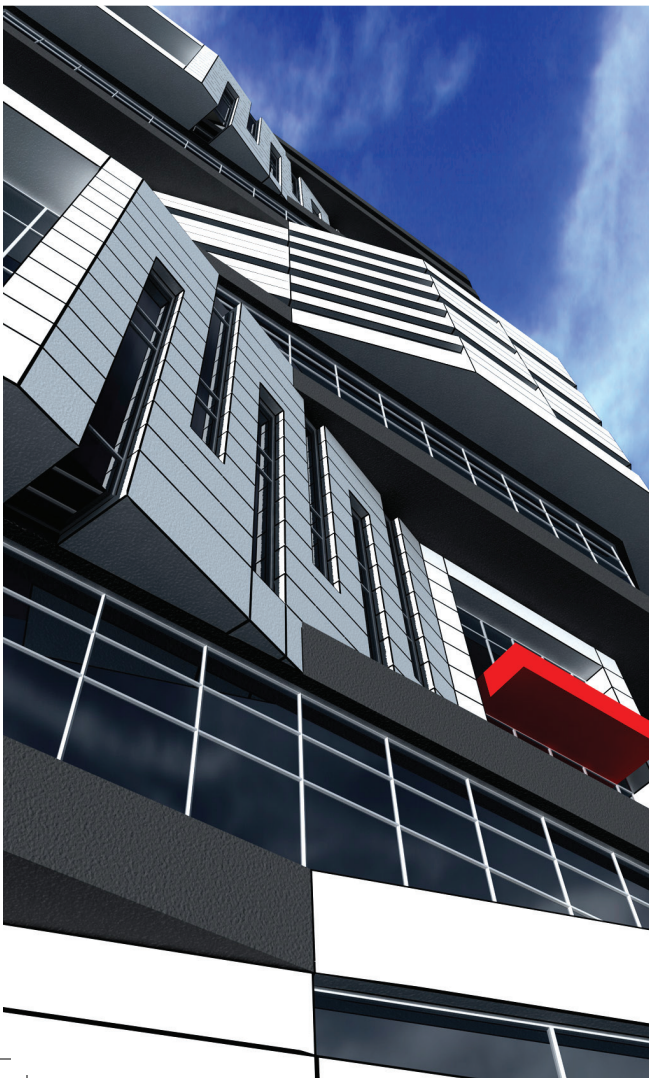


BERNARD SAADE

PROFILE

SALATA 14

DOHA, QATAR



Designed by E-Square Architects in Lebanon, this building is a 14-story commercial structure in the heart of Doha, the capital of Qatar. The concept underlying the appearance of the Salata 14 building is to reflect the urban site; its fragmented facade panels are an abstraction of the property lines.

The architects selected a material that could be easily shaped to fit this conceit as well as withstand the harsh climate conditions. The entire facade was surfaced using Neolith, an ultra-compact, light-weight mineral-based material available in slabs up to 3200 by 1500 millimeters, and in a variety of thicknesses, from 3 millimeters to 12 millimeters.

The technical properties of the cladding were a significant factor in the success of the project. Extremely hot summers and biting sand and winds are of concern in Qatar; Neolith is abrasion- and UV resistant, and can withstand thermal extremes without compromise.

An overarching goal for Salata 14 was to support the construction of green buildings. To meet this goal, a ventilated facade system using Neolith slabs was developed, instead of using conventional composite panels.

ARCHITECT:
E-SQUARE ARCHITECTS
TECHNICAL PLANNERS:
QATAR STEEL TECHNOLOGIES
CONTRACTOR: RED LINE
CONTRACTING
FACADE: NEOLITH BY THESIZE



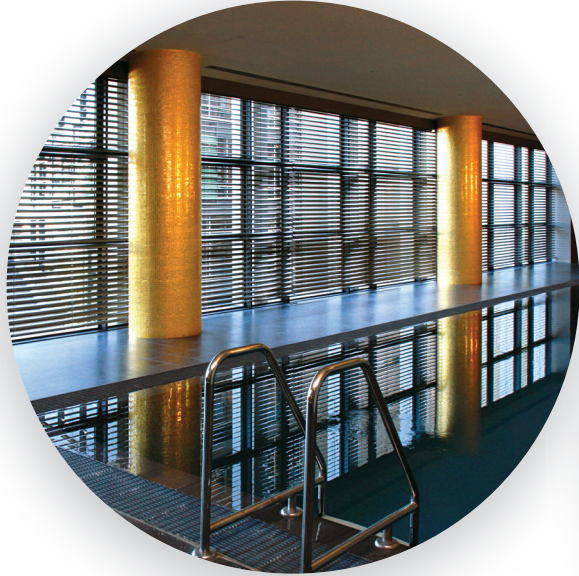
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PROFILE

J. CRAIG VENTER INSTITUTE

LA JOLLA, CALIFORNIA

ARCHITECT: ZIMMER GUNSUL
FRASCA ARCHITECTS
M/E/P ENGINEER: INTEGRAL GROUP/IDEAS
STRUCTURAL AND CIVIL ENGINEER:
KPFF CONSULTING ENGINEERS
FACADE: PACIFIC ARCHITECTURAL MILLWORK

Since the scientists at the J. Craig Venter Institute are working on biological genomic research, their new facility reflects related ideals. Investigating issues germane to global climate change and hydrocarbon dependency, it is only fitting that the 45,000-square-foot Southern California structure put its principles into practice.

Laboratories traditionally consume massive amounts of energy, for both equipment operation and for heating and

cooling. In pursuit of carbon-neutral status, strict strategies for environmentally beneficial mechanical systems and materials were employed whenever possible. Using a timber curtain wall system from Pacific Architectural Millwork contributed to that goal. The system is U.S.-tested for air, water, structural, and thermal performance; woods are certified by the Forest Stewardship Council or the Sustainable Forestry Initiative.

Ted Hyman, managing partner of ZGF Architects, said, "The architectural design takes cues from a sailboat, in which all of its systems must work together to make it self-sustaining. Incorporating a wood facade not only made sense from a sustainability standpoint—the Spanish cedar comes from renewable sources, is durable, and can weather naturally without chemical treatments—but boat-builders have been using this type of wood for centuries."



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¹RSI = 8.8 ($\text{m}^2\cdot\text{K}/\text{W}$) per 50.8 mm thickness; $U\text{-value} = 0.11 \text{ W}/(\text{m}^2\cdot\text{K})$

²RSI = 1.73 ($\text{m}^2\cdot\text{K}/\text{W}$) per 25.4 mm thickness; $U\text{-value} = 0.58 \text{ W}/(\text{m}^2\cdot\text{K})$

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The faceted facade of this new academic and research facility represents the innovative, collaborative, and life-changing activities housed inside. It is home to the University of Florida's colleges of Pharmacy and Medicine.

Todd Bertsch, Design Director of HOK in Atlanta, said, "The building's unique attribute is the blend of undergraduate teaching and learning space with state-of-the-art research. We wanted the undergraduate students to see and get excited about the

cool research going on inside the building. Our solution combined these activities under one roof while providing a bridge between the university and other Lake Nona institutions."

With its bold colors, shapes, and forms, the building presents a memorable image from all directions. A multi-material surface comprising composite metal panels, a terra-cotta rain screen system, and elaborate stainless steel sunshades gives

the conventionally reinforced, four-story concrete structure an iconic identity.

Research areas include two floors of open laboratories made up of large, "ballroom"-plan island bench areas. Labs have views of a wooded preserve to the south. An internal glass wall provides visual connections to offices.

The sustainable-design strategies include daylight harvesting, sun-shading devices, chilled-beam technology, heat pump recovery

for reheat, solar thermal and photovoltaic panels, and green roofs. The sunshade is made of GKD Escal 7 by 1 architectural mesh, which simultaneously addresses sun control and visual transparency.

PROFILE

UNIVERSITY OF FLORIDA LAKE NONA RESEARCH CENTER

ORLANDO, FLORIDA

ARCHITECT: HOK ARCHITECTS,
KANSAS CITY, MO
STRUCTURAL ENGINEER:
WALTER P. MOORE
FACADE: GDK METAL FABRICS



PERFORMANCE UNDER PRESSURE



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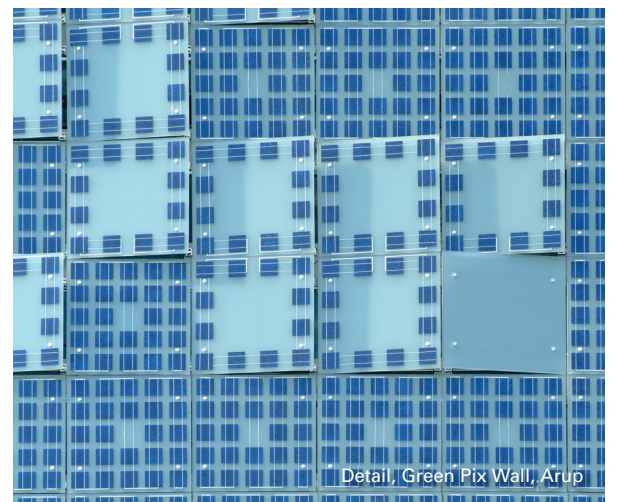
Green Pix Wall, Arup



ag4 Architect, Mediamesh, GKD



Atelier a Torce, Batir, GKD



Detail, Green Pix Wall, Arup

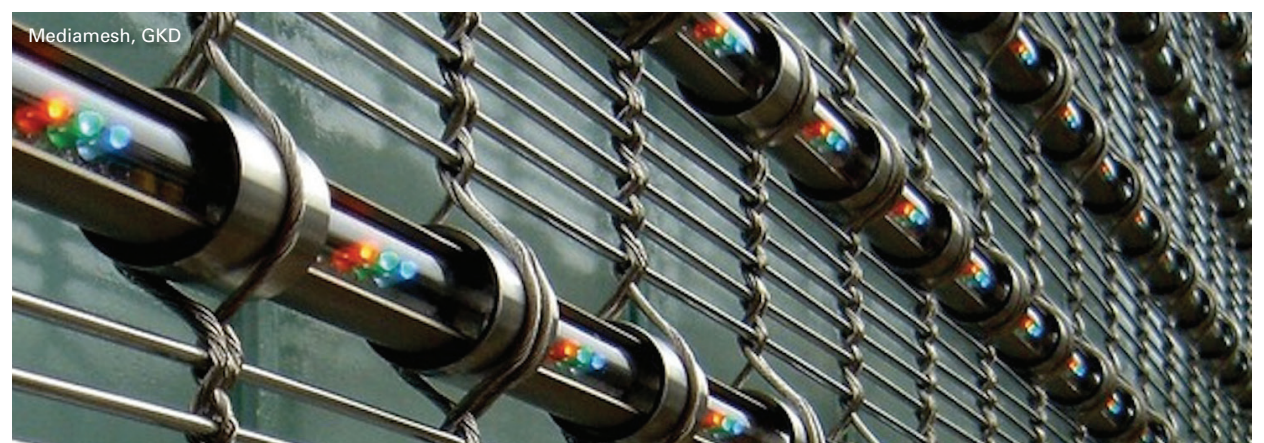
TRENDS

Whether for advertising or artistic purposes, media walls are transforming facades.

THE LIGHTING ON THE WALL

In the digitally-connected, 24/7 world, it seems everyone—and everything—is in a perpetual state of “on.” Buildings are no exception. But where once facilities managers sent terse memos reminding tenants to turn out the lights at the end of the day, now automated systems-monitors (with a little human help from engineers) are literally flipping the switch on eye-catching, energy-efficient exterior lighting programs.

These media walls are as much an electronic canvas as they are a billboard, albeit a complex one. Building physicists



Mediamesh, GKD

and facade specialists analyze interior lighting and solar heat-gain conditions during the daylight hours, then develop a combination software/hardware package that implements dramatic after-dark imagery.

As part of a new project, media walls can be a money making feature, mediums for virtually endless series of advertising and branding campaigns. LED systems are more economical than conventional billboard signage, with lower installation, energy, and maintenance costs. In Beijing, Arup consulted on the world’s largest LED screen, a 2,000-

square-meter skin called the GreenPix wall. It is powered by a self-sufficient photovoltaic system that captures twice as much energy as the facade uses.

A media wall can also invigorate an older building, giving it a modern facelift. French A/E firm Batir wrapped the facade of a aging manufacturing facility with illuminated mesh screens, turning it into an ever-changing display of light, color, and detailed graphics. The woven steel reflects sunlight during the day, and provides a pleasing glow from the embedded, weatherproof LEDs at night.

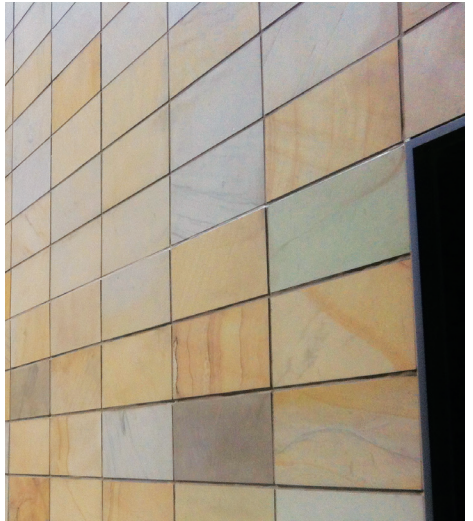


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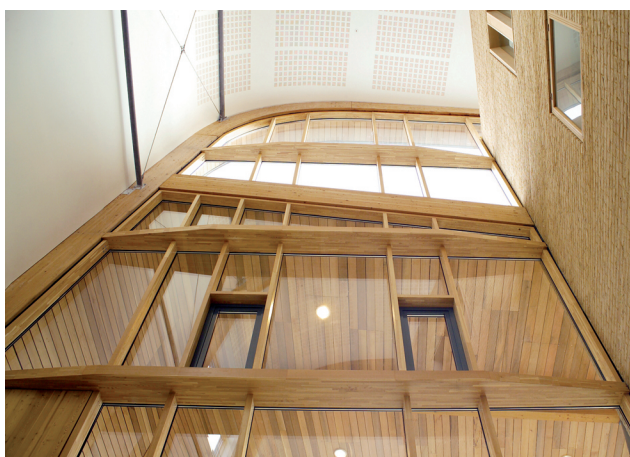
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APRIL

THURSDAY 17

LECTURE

Contemporary Art and Technology, Is the Media the Message?

6:30 p.m.
Des Moines Art Center
4700 Grand Ave.
Des Moines, IA
desmoinesartcenter.org

TOUR

Design Exposed: Epstein/Metter Studio: Designing Infrastructure
6:00 p.m.
Epstein
600 West Fulton St.
Chicago
aiachicago.org

MONDAY 21

EXHIBITION OPENING

City and Regional Planning's Inaugural Exhibition and Reception
5:00 p.m.
Knowlton School of Architecture
Ohio State University
275 West Woodruff Ave.
Columbus, OH
knowlton.osu.edu

TUESDAY 22

LECTURES

The Bloemaert Legacy
1:30 p.m.
Milwaukee Art Museum
700 North Museum Dr.
Milwaukee
mam.org

Louis Sullivan and His Mentor - John Herman Edelmann, Architect
7:00 p.m.
Glessner House Museum
800 South Prairie Ave.
Chicago
glessnerhouse.org

WEDNESDAY 23

EVENT

Gallery Talk and Book Signing: Exhibiting artists Tierney Gearon, Elinor Carucci and MoCP Curator and Associate Director Karen Irvine
4:00 p.m.
Museum of Contemporary Photography
600 South Michigan Ave.
Chicago
mocp.org

THURSDAY 24

EXHIBITION OPENING

Home Truths: Motherhood and Photography
4:00 p.m.
Museum of Contemporary Photography
600 South Michigan Ave.
Chicago
mocp.org

LECTURE

Susan Bright
6:30 p.m.
Museum of Contemporary Photography
600 South Michigan Ave.
Chicago
mocp.org

FRIDAY 25

EVENT

At the Speed of Light
5:00 p.m.
Cincinnati Art Museum
953 Eden Park Dr.
Cincinnati
cincinnatiartmuseum.org

SATURDAY 26

SYMPOSIUM

Clarke House Museum Symposium: Virtue & Vice—Reform in Early Chicago
9:00 a.m.
Glessner House Museum
800 South Prairie Ave.
Chicago
glessnerhouse.org

SUNDAY 27

EXHIBITION CLOSING

Foto Europa: 1840 to Present
10:00 a.m.
Detroit Institute of the Arts
5200 Woodward Ave.
Detroit
dia.org

MONDAY 28

TOUR

Private Tour: Levere Memorial Temple and the University Guild Collection
10:00 a.m.
Glessner House Museum
Northwestern University,
Evanston
633 Clark St.
Evanston, IL
glessnerhouse.org

MAY

THURSDAY 1

FILM AND LECTURE

A Girl Like Her
6:00 p.m.
Museum of Contemporary Photography
600 South Michigan Ave.
Chicago
mocp.org

SUNDAY 4

EXHIBITION CLOSING

The Essential Robert Indiana
Indianapolis Museum of Art
4000 Michigan Rd.
Indianapolis
imamuseum.org

SUNDAY 11

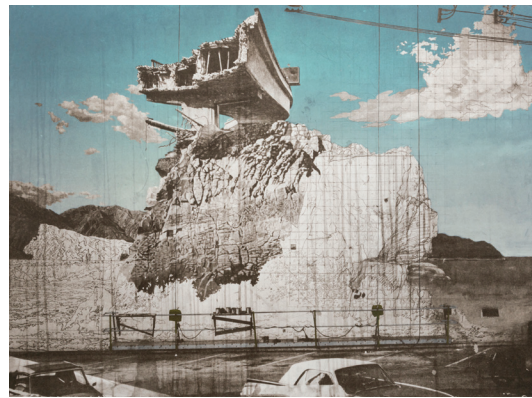
EXHIBITION CLOSING

Genius and Grace: François Boucher and the Generation of 1700
Cincinnati Art Museum
953 Eden Park Dr.
Cincinnati
cincinnatiartmuseum.org

WEDNESDAY 14

SYMPOSIUM

Robotic Fabrication in Architecture, Art, and Design
10:00 a.m.
Taubman College of Architecture and Urban Planning
University of Michigan Architecture
2000 Bonisteel Blvd.
Ann Arbor, MI
caup.umich.edu



L.A. FINE ARTS SQUAD

EVERYTHING LOOSE WILL LAND

Graham Foundation
4 West Burton Place, Chicago, IL
May 1 to July 26

Everything Loose Will Land explores the intersection of art and architecture in Los Angeles during the 1970s. The show's title refers to a Frank Lloyd Wright quote that if you "tip the world over on its side and everything loose will land in Los Angeles." This freeness alludes to the fact that this dislodging did not lead to chaos but rather a multidisciplinary artistic community that redefined LA. The exhibition features one hundred and twenty drawings, photographs, media works, sculptures, prototypes, models, and ephemera. The presentations function as a kind of archive of architectural ideas that connect a variety of disciplines. Projects by Carl Andre, Ed Moses, Peter Alexander, Michael Asher, James Turrell, Maria Nordman, Robert Irwin, Frank Gehry, Richard Serra, Coy Howard, Craig Elwood, Peter Pearce, Morphosis, Bruce Nauman, Craig Hodgetts, Jeff Raskin, Ed Ruscha, Noah Purifoy, Paolo Soleri, Ray Kappe, Denise Scott Brown, Archigram, L.A. Fine Arts Squad, Bernard Tschumi, Eleanor Antin, Peter Kamnitzer, Cesar Pelli, Andrew Holmes, Elizabeth Orr, and others are explored. Curated by Sylvia Lavin, Director of Critical Studies in the Department of Architecture and Urban Design at UCLA, the show began its journey at the MAK Center for Architecture and then traveled to the Yale School of Architecture before arriving at the Graham Foundation.



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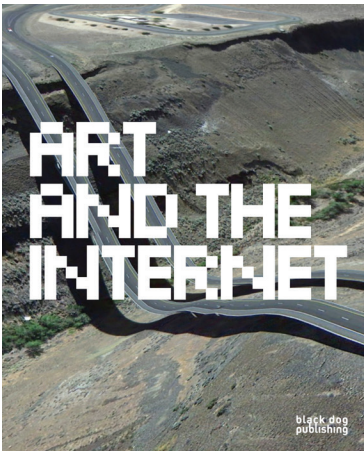


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Left: Korakrit Arunanondchai's "2012-2055," a two-channel video installation.



ART AT THE SPEED OF THE INTERNET

Art and the Internet
by Joanne McNeil, Domenico Quaranta, Nick Lambert
Black Dog Publishing, \$29.95

I approached *Art and the Internet* with skepticism, fearing a barrage of selfies, cat memes, and performances by self-indulgent teens on YouTube. I shouldn't have been so quick to judge. *Art and the Internet* surveys works and methods of art-making and exhibition over the brief but varied 25-year history of web/internet/net-art. This art is inclusive, multifaceted, and varied. *Art and the Internet* is an indispensable history and discussion of a mode of art-making faced with much discomfort—about how to interpret it, archive it, and display it. Art

made for, by, or through the Internet is produced so rapidly that the evolution of this genre has developed distinctive categories. This raises questions for discussion that outline the chapters of the book: net.art, Activist Art and Surveillance-Related Work, Internet-Enabled Participatory, Post-internet Art, and Social Media Influenced Art and Identity Construction. The advent of the Internet made many new methods possible. Digital technologies, software programs, and languages of code created an accessible entry point into the art world. Technique takes

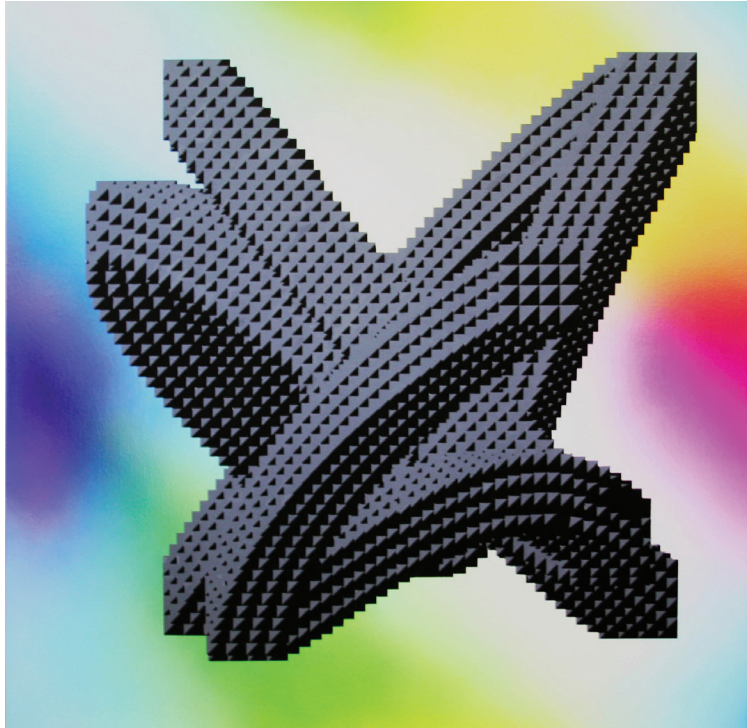
on a different meaning in the Internet age. Some of the works surveyed, like the provocative collages of Kenneth Tin-Kin Hung, demonstrate the use of Internet age technologies—Photoshop and the wit employed by many Internet artists. Hung's work is a pointed critique of world leaders and cultural values while taking on the aesthetic of LOLcats or Dragon Ball Z. These collages cannot be passed by with the fleeting attention of a jokey meme, because they invite deeper engagement. Hidden among the imagery of a beaked President Bush is an 'ENTER' that

leads you to the next image, the next critique, and the next chance to advance the game created by a hidden link. The Internet, like the art created as a result of it, is not all light-hearted. Concerns about privacy, voyeurism, and surveillance are becoming increasingly more integral to discussions about the Internet's role in our lives. Joanne McNeil's essay *Connected By Camera* profiles the emergence of live camera "camgirls" and "camboys" in the early years of the internet and their willful revealing of their lives. This invited gaze is very different than the geo-tracking created in *Directions to the Last Visitor* by Charles Broskoski. This site displays the location of its last visitor, based on his or her IP address. At the speed of the connection you can know another user's exact location. These pieces bring an intimacy to interactions on the web but reveal the other side of the Internet as a platform for surveillance and exposure. Display in the "white cube" of an art gallery illustrates one of the primary critiques of Internet art. How can these works be re-contextualized to a fixed position in a gallery? Do works change as they become projections, still images, and three-dimensional displays? Further still, what is the role of the computer itself in the white cube? Nicholas Lambert describes different artists and curator's answers to these provocations. Some have embraced the mess of cords and ugly screens while others attempt to present screens clear of clutter. Alternatively, the notion of a gallery has been fundamentally turned on its head with works like Rafael Rozendaal's *Bring Your Own Beamer (BYOB)*, where web artists

were invited through an open call to bring a projector and display their works however they wish. In curating the event and not the pieces on display, this exhibition is emblematic of the art world's discomfort with Internet art. Aram Bartholl's *Speed Shows* furthers this notion of the DIY or accessible aspect of Internet art by setting up galleries in Internet cafés where artists' works are their laptop home screens. Once the user is signed in he or she can then surf the web as normal. This kind of work aggressively avoids the "white cube," or at the very least is as uncomfortable with the "white cube" as it was with them. Nonetheless, Internet art has found its way into the institutions that had previously rejected it or were unsure of how to embrace it. For instance, Attilia Fattori Franchini describes the "takeover" of Create London's website as an integration of outsider internet art with a brick and mortar gallery institution. Projects such as these describe the new dynamic between Internet art and the gallery—the hacker culture of early Internet art and its recent integration into the arts community as a whole. These takeovers are a step in re-contextualizing work from purely autonomous and Internet-based to a gallery exhibition that displays a version of that virtual work.

Art and the Internet is an important entry into understanding a kind of art that has only existed for the last 25 years. Advances in technology and our thinking about the Internet's relationship to art have evolved dramatically over that brief history. Even the most recent art surveyed shows its age in an art practice that is subject to a constantly increasing population of users, critiques, artists, and technologies. *Art and the Internet* does not disguise the relationship to the wit, darkness, and multifaceted nature of Internet cultures. This schizophrenic collection of works serves as a first draft of history for the next generation of web artists, whose relationship with art changes, like the Internet itself, with every second.

LUCAS GOLDBACH IS A DESIGNER/PROJECT MANAGER AT MORGANTE-WILSON ARCHITECTS IN CHICAGO.



COURTESY ANDRE HEMER, BRADLEY HORENSTEIN

Spaulding Rehabilitation Hospital, Charlestown, MA. Right: Peter Busby.



Some Other Responsibilities

Peter Busby merged his Vancouver-based firm with Perkins + Will in 2004. He has since risen to managing director of the firm's San Francisco office and launched its Sustainable Design Initiative, which embedded environmental design thinking throughout its practice worldwide. As founder of the Canada Green Building Council, he helped make LEED widespread in Canada. But he tells *AN* Midwest Editor Chris Bentley that the certification system's future is uncertain. Instead, his focus is on climate resilience and performance.

Chris Bentley: You created Perkins + Will's (P+W) Sustainable Design Initiative. How do you corral the efforts of a huge firm like P+W around a massive topic like sustainable design? Care to share any advice for architects looking to do the same for their firms?

Peter Busby: Our plans are published on our website, so anyone who wants to see what we're doing can actually download the documents. I've actually been into competitors' offices and seen our plans on their desks, so I know some people are doing that. We're currently on our fourth overall plan. We feel that plans for greening a firm need to evolve over time, they need to be flexible. The core of the Sustainable Design Initiative is five pieces: research, education, communications, demonstration, and best practices, and obviously a marketing and awareness piece. The hardest work was the education. We're now moving away from LEED-centric education and moving into other more specialized areas. We have task forces around material health, resilience, regenerative design, benchmarking.

What's the biggest challenge to keep that momentum going? The biggest challenge is education. First of all educating ourselves about sustainable design, understanding how to do it in every climate zone we work in. There's no textbook on sustainable design—it's a learned art. And then education of our clients, of approving

authorities, and overcoming bureaucratic hurdles. Things like the requirement for potable water in toilets that exists in almost every jurisdiction in North America.

The education requirement is constant, non-stop, all the time, everywhere. As sustainable design changes, continuing the education movement to move new ideas out into practice is an ongoing effort. It is very rewarding.

There's an argument that good design is by definition efficient. That designing for climatic and human needs is a given in this day and age. But we're struggling to get greenhouse gas emissions under control in time to avert substantial warming. Are we doing enough to move the needle?

We're failing miserably! Although, McGraw Hill published data that seems to indicate 60 percent of construction in North America is in one level of LEED or another, it doesn't seem to have had a measurable impact on the growth of carbon in the atmosphere, globally. If you look at carbon emissions in the U.S. specifically, they've plateaued and in fact are decreasing. We're not sure if that's because of the recession, the cheapness of natural gas, or whether it's because of the offshoring of manufacturing.

We like to think that the building sector has had an impact. It should have an impact. It must be making a difference, but then there's no factual evidence related to that. Part of the problem is that 90 percent of the building stock at the end of a decade is still existing buildings. Replacing buildings is a 100-year enterprise. So it's going to take decades to get better performance out of the existing building stock.

Notwithstanding that, it seems tenants want better performance, and tenants drive landlords, so they're starting to look at higher levels of performance. It used to be that landlords subscribed to everything BOMA (Building Owners and Managers Association) said. But now the big landlords and builders seem to have a great deal of interest in higher levels of performance. So there is traction.

The most interesting thing that's

happening right now is that, for the last 10 years we've been pursuing certain goals that are around reduction of carbon emissions in buildings in the face of global warming. Today we know global warming's here and we've seen the impacts of it on storm surges and so on. So now there's two fronts to fight: one is to continue to reduce carbon in our buildings, and we've got to adapt and create resilience for buildings.

The Spaulding Rehabilitation Hospital project is designed for disaster resilience, which of course has been a hot topic at least since Hurricane Sandy. What's missing from the ongoing discussion about disaster resilience in design?

There are all kinds of wonderful initiatives to look at resilience; all kinds of interesting projects—mostly speculative—in New York as a result of it. But the general ideas of resilience are sensible, deep green ideas that have been the core of high-performance buildings.

The ability to support life without electrical or mechanical systems connected to a grid, so all high-performance buildings have the ability to do that. To tap into fresh-water on site, to open windows and get fresh air, the ability to withstand temperature changes and storms. It's about the quality of the envelope, which is a sustainable design strategy. We're focusing on the envelope itself so when power shuts down, people stay warm or cool, and the building's able to resist wind.

Flooding is relatively new. I guess we weren't thinking about that so much 15 years ago. We knew that predictions for sea-level rise were one, two, three feet depending on the decade or the prediction. But it's the combination of general sea-level rise and the increasing violence of storm surges, the increasing power of storms to release precipitation. There's much more moisture in the storms that are coming at us, much higher velocity of wind driving much higher crests of wave. The impact you saw in Sandy and Katrina is quite profound.

Some of your projects, like the

Vale Living with Lakes Centre for Applied Research in Environmental Restoration and Sustainability in Sudbury, are designed to respond to a 2050 climate. There's a lot of uncertainty about the specific impacts of a warming climate on that kind of timescale, so what do you consider in designing for 2050?

That was a unique project to consider this issue. It was a few years ago when our knowledge of climate change impact was less sure than it is today. We selected a design year of 2050 where the nine major mathematical models of climate change all indicated impacts. For this particular area they indicated a temperature moderation in the wintertime of about 15 to 16°F and the need for cooling in the summertime of something like 8 or 9°F. These were dramatic numbers when we heard them.

Just like storms and water, temperature-wise climate change has profound swings locally, particularly in more extreme climates. Moderate climate zones are less affected, and Sudbury's far enough north that they're seeing really dramatic temperature changes.

We accepted the challenge, accepted the premise and designed mechanical systems that would withstand them. We proposed fire places that were wood pellet driven, which is a renewable source of energy and a waste product coming from saw mills in that part of the world. It was the first time we'd actually designed a mechanical system that anticipated climate change and would reach its optimal performance after the impacts of climate change had had an effect on the climate of the building itself.

How do we apply those lessons today in our practice? We're all that more adamant of the performance of the building to deal with warming. Better shading, better glass, better natural ventilation. We're more adamant about shading coefficients because it's only going to get worse. It might have a payback of 5 years or 10 years, but in 20 to 30 years when those envelopes are still sitting there it's going to have an even more powerful effect.

You were one of the founders of Canada's Green Building Council. What do you make of some of the criticisms of LEED, like that it can legitimize unsustainable development and enable greenwashing? Is it a positive trend that municipalities are requiring LEED adherence for new construction, or is there a better way forward for sustainable design?

I don't want to put the wrong spin on this—USGBC and LEED have been extremely powerful at changing the marketplace. It's exceptionally successful; it's well

known the world over.

Notwithstanding that, it is subject to political and lobbying pressure. The flexibility of the system to grow and change over time is being slowly tested, as it now takes four years to bring out an upgraded version as opposed to the two-year cycle it used to be. The ability to get dramatic change is more limited than it used to be.

We still don't see anything like European standards where you have mandated maximums of so much energy per square meter. Where are those types of performance measures? Carbon emissions ultimately need to be the measuring stick for LEED performance. There are still lots of credits given out for less meaningful issues.

Another problem with LEED is the cost. The cost of certification, of reviews, has not come down. In every other industry standard like this, over time the pioneers get through and it becomes mass levels of usage and the costs reduce significantly. LEED is still a cumbersome organization that requires a lot of intellectual effort and financial investment to gain certification.

Those are my criticisms of LEED. Don't misconstrue them—I'm a huge fan of the system. It's not front and central in terms of what P+W is doing anymore. We take it as a given, it's kind of like breathing. Recently we've been focusing on the Living Building Challenge and net-zero design. These are the challenges that are out there for progressive environmental design.

Is performance the first order of design? Does form follow performance for you?

I wouldn't say that, but I would say that form has to be influenced by performance. Form is shaped by several things. If it were only shaped by environmental design, you might not end up with the right solutions.

Architecture's a very public art. Painters paint in the studio, carvers carve in their studio, dancers dance in their studio, but architects perform their art in public. So there's a responsibility that goes with that to create beauty, elegance, and simplicity, to contribute to the urban condition. It's a broad art.

It's interesting. We just finished our internal design review and I can say that there are no buildings in P+W at the moment that are not physically affected by environmental design criteria. Even five years ago we were still producing high-rise, glazed buildings in Riyadh with no solar protection and all four sides had floor-to-ceiling glass. It sounds ridiculous, but that's what the client wanted and we gave them what they wanted. Well, guess what? You've got some other responsibilities as well. It's not just about the client's needs.



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